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Indian Standard

**WOODWORKING MACHINES — SINGLE BLADE CIRCULAR SAW
BENCHES WITH OR WITHOUT TRAVELLING TABLE —
NOMENCLATURE AND ACCEPTANCE CONDITIONS**

(First Revision)

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

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Price Group 7

Indian Standard

WOODWORKING MACHINES — SINGLE BLADE CIRCULAR SAW BENCHES WITH OR WITHOUT TRAVELLING TABLE — NOMENCLATURE AND ACCEPTANCE CONDITIONS

(First Revision)

NATIONAL FOREWORD

This Indian Standard (First Revision) which is identical with ISO 7008 : 1983 'Woodworking machines — Single blade circular saw benches with or without travelling table — Nomenclature and acceptance conditions, issued by the International Organization for Standardization (ISO), was adopted by the Bureau of Indian Standards on 5 January 1990, on the recommendation of the Woodworking Machine Tools Sectional Committee (PED 01) and approval of the Production Engineering Division Council.

This standard was first issued in 1974 as 'Test chart for woodworking single blade circular saw benches with or without travelling table'. Consequent upon the publication of ISO 7008 : 1983, this standard (including its title) has been revised by adopting the ISO standard, to bring it in line with the international practice.

The text of ISO standard has been approved as suitable for publication as Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

- a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.
- b) Comma (,) has been used as a decimal marker, while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

CROSS REFERENCES

In the Indian Standard, the following international standard is referred to. Read in its place the following:

<i>International Standard</i>	<i>Indian Standard</i>	<i>Degree of Correspondence</i>
ISO R/230 Test code for machine tools (since revised as ISO 230/1-1986)	IS 2063 : 1988 Code for testing machine tools — Geometric accuracy of machines operating under no-load or finishing conditions (<i>first revision</i>)	Identical

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1 Scope and field of application

This International Standard specifies the terminology appropriate to each part of the machine and, with reference to ISO/R 230, the geometrical test for single blade circular saw benches with or without travelling table and gives the corresponding permissible deviations which apply to machines for general purpose use and normal accuracy.

This International Standard deals only with the verification of accuracy of the machine. It does not apply to the testing of the running of the machine (vibrations, abnormal noises, stick-slip motion of the components etc.), nor to its characteristics (speeds, feeds etc.) which should generally be checked before testing accuracy.

This International Standard does not impose any practical test for single blade circular saw benches with or without travelling table. Practical tests should be exceptions and have to be stated in a previous agreement between the producer and the user.

2 Reference

ISO/R 230, *Test code for machine tools*.

3 Preliminary remarks

3.1 In this International Standard all the dimensions and permissible deviations are expressed in millimetres.

3.2 To apply this International Standard, reference should be made to ISO/R 230, especially for installation of the machine before testing, the warming up of the saw spindle and other moving parts and description of measuring methods. The measuring instruments shall not permit errors over 1/3 of the checked tolerances.

3.3 The sequence in which the geometrical tests are given is related to the sub-assemblies of the machine and this in no way defines the practical order of testing. In order to make mounting of instruments or gauging easier, tests may be applied in any order.

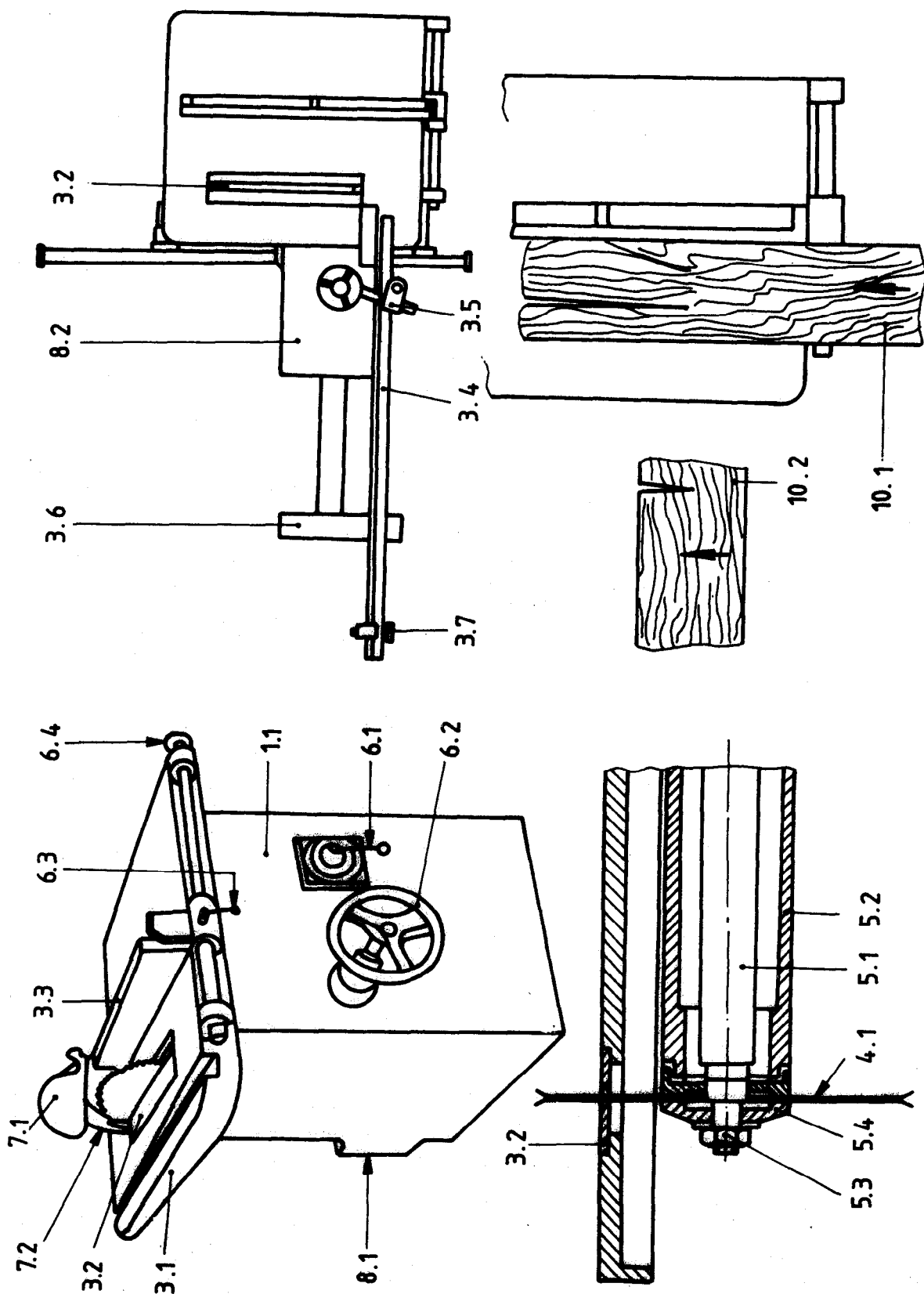
3.4 When inspecting a machine, it is not always possible or necessary to carry out all the tests given in this International Standard.

3.5 It is up to the user to choose, in agreement with the manufacturer, those tests relating to the properties which are of interest to him, but these tests are to be clearly stated when ordering a machine.

3.6 A movement is longitudinal when it takes place in the working direction of the piece.

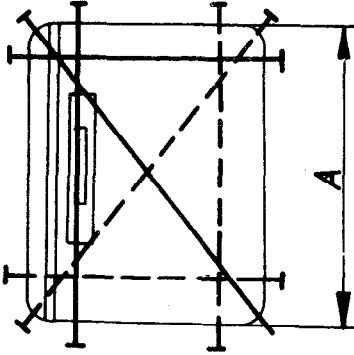
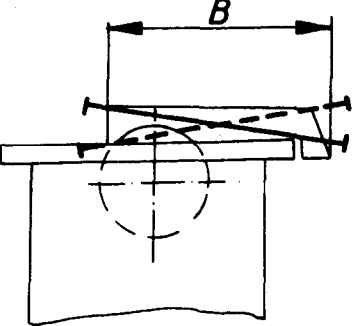
3.7 When establishing the tolerance for a measuring range different from that given in this International Standard (see 2.311 in ISO/R 230), it should be taken into consideration that the minimum value of the tolerance is 0,01 mm.

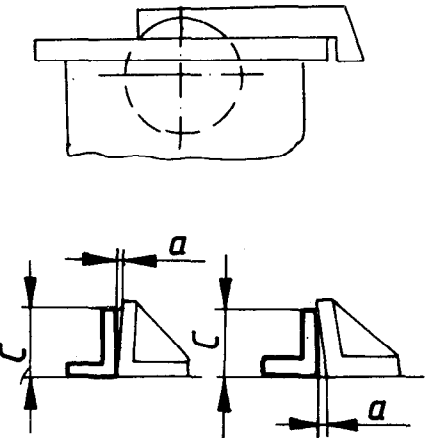
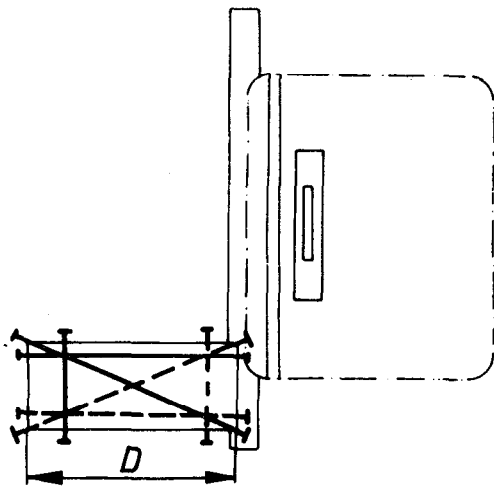
4 Nomenclature

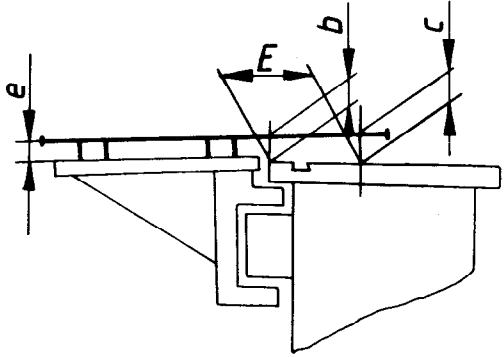
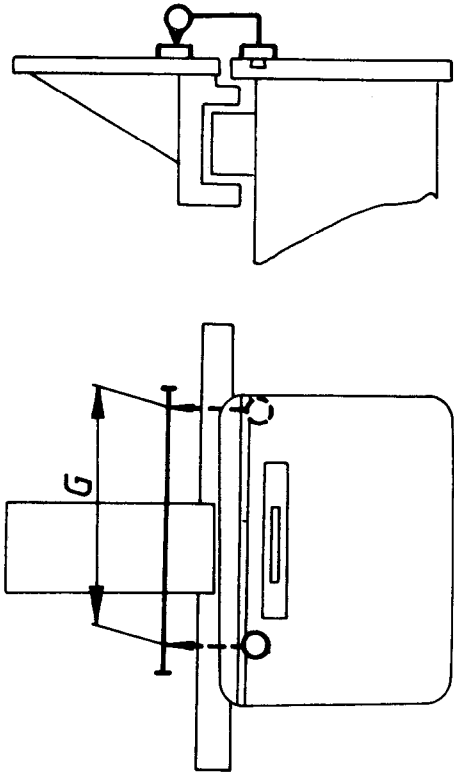


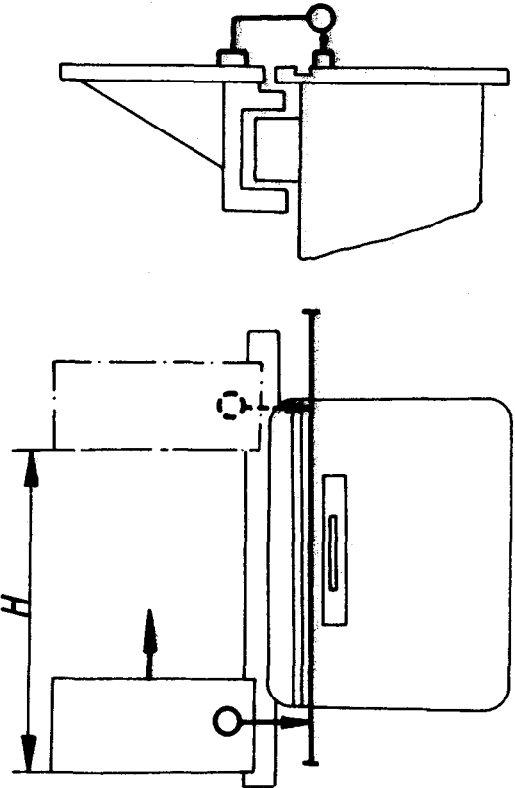
Ref.	Single blade circular saw benches with or without travelling table
1	Framework
1.1	Main frame
2	Feed of workpiece and/or tools
3	Workpiece support clamp and guide
3.1	Table
3.2	Table insert
3.3	Fence
3.4	Crosscut fence
3.5	Clamp
3.6	Travelling table extension
3.7	Length stop
4	Toolholders and tools
4.1	Sawblade
5	Workheads and tool drives
5.1	Saw spindle
5.2	Bearing housing
5.3	Saw spindle nut
5.4	Flange
6	Controls
6.1	Starting switch
6.2	Sawblade vertical adjustment
6.3	Fence lock
6.4	Fence adjustment
7	Safety devices
7.1	Saw guard
7.2	Riving knife
8	Miscellaneous
8.1	Dust extraction hood
8.2	Travelling table
9	Free
10	Examples of work
10.1	Ripping
10.2	Crosscutting

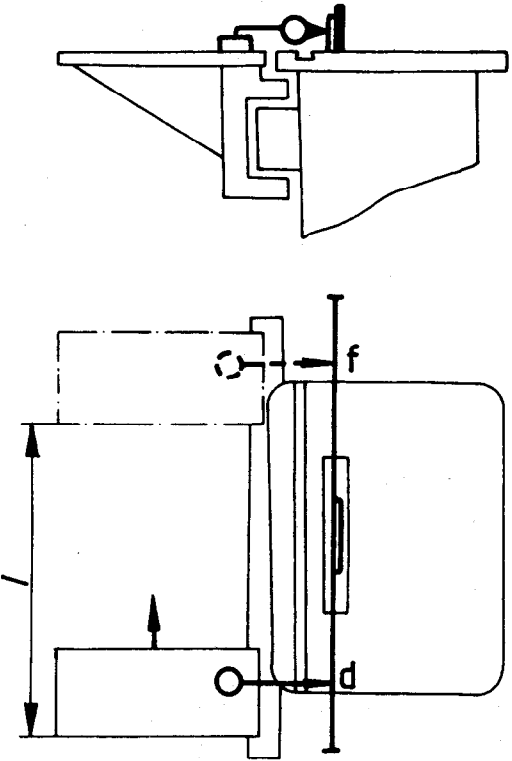
5 Acceptance conditions and permissible deviations

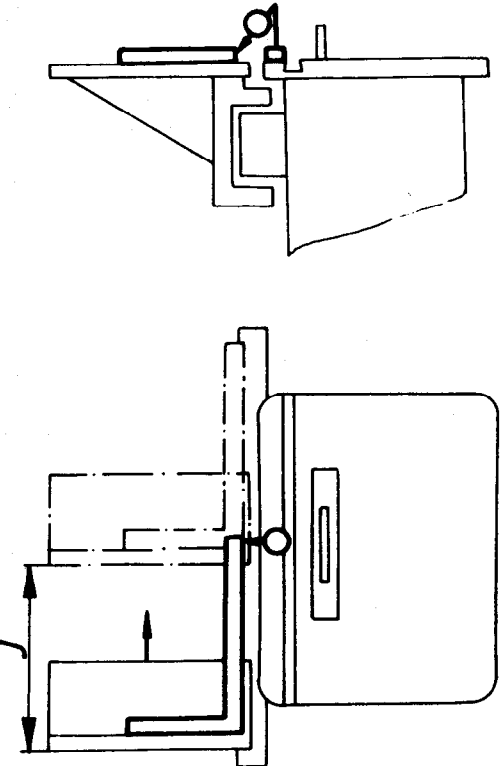
No.	Diagram	Object	Permissible deviation	Measuring instruments	Observations and references in test code ISO/R 230
G1		<p>Checking flatness of the table</p> <p>a) transverse straightness</p> <p>b) longitudinal straightness</p> <p>c) diagonal straightness</p>	<p>a) and b)</p> <p>0,20 for $A < 630$ 0,25 for $630 < A < 1250$ 0,30 for $A > 1250$</p> <p>c)</p> <p>0,30 for $A < 630$ 0,40 for $630 < A < 1250$ 0,50 for $A > 1250$</p>	<p>Straightedge and feeler gauges</p>	<p>Clause 5.212 and 5.322</p>
G2		<p>Checking diagonal straightness of the fence</p>	<p>0,15 for $B < 630$ 0,25 for $B > 630$</p>	<p>Straightedge and feeler gauges</p>	<p>Clause 5.212</p>

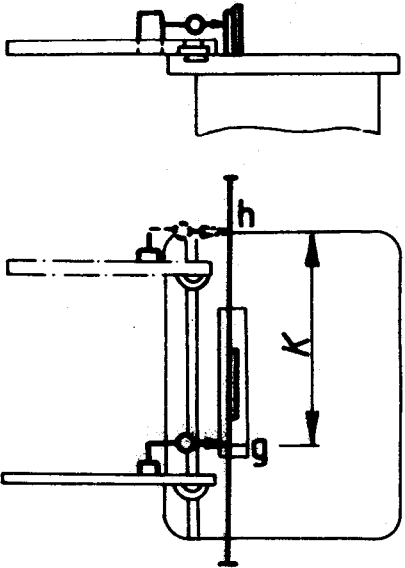
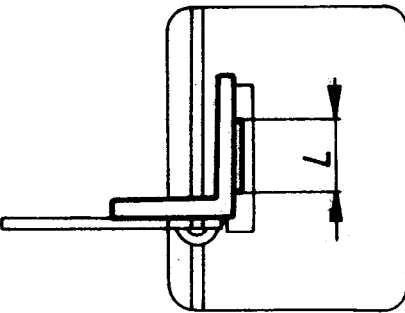
No.	Diagram	Object	Permissible deviation	Measuring instruments	Observations and references in test code ISO/R 230
G3		Checking squareness of the fence to the table	0,15 / 100*	Square and feeler gauges	Clause 5.512.2 * Distance C
G4		* Checking flatness of the travelling table a) longitudinal straightness b) transverse straightness c) diagonal straightness	a), b) and c) 0,20 for $D < 630$ 0,30 for $D > 630$	Straightedge and feeler gauges	Clause 5.212 and 5.322

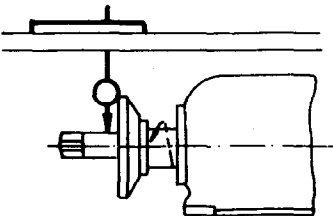
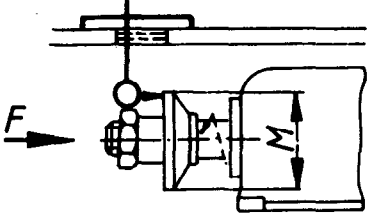
No.	Diagram	Object	Permissible deviation	Measuring instruments	Observations and references in test code ISO/R 230
G5		<p>Checking parallelism in the transverse direction of the travelling table of the machine, in a horizontal plane</p>	<p>$E = 450$ $b - e = 0,20$ $c - e = 0,20$ $c > b$</p>	<p>Straightedge and feeler gauges</p>	<p>Clause 5.412.2</p> <p>Where the travelling table is supported by an edge arm, the permissible deviation is doubled at each end of the movement.</p> <p>The travelling table shall always be higher than the table of the machine.</p> <p>The deviation shall be checked along the whole stroke of the travelling table.</p>
G6		<p>Checking parallelism in the sawing direction of the travelling table to the table of the machine, in the horizontal plane</p>	<p>0,25 for $G = 1000$</p>	<p>Straightedge and dial gauges</p>	<p>Clause 5.412.2</p>

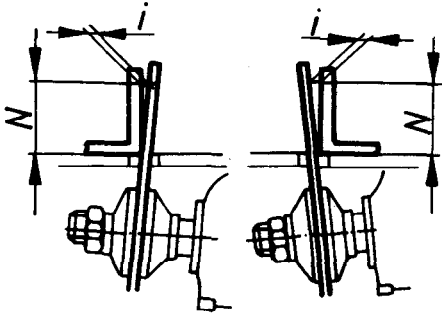
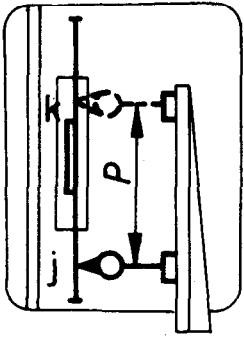
No.	Diagram	Object	Permissible deviation	Measuring instruments	Observations and references in test code ISO/R 230
G7	 <p>The diagram consists of two parts. The top part is a side-view schematic showing a horizontal machine table and a travelling table mounted on it. A dial gauge is positioned to measure the vertical displacement of the travelling table. The bottom part is a front-view schematic of the travelling table. It shows a rectangular block with a vertical arrow indicating upward motion. A height dimension 'H' is marked on the left. A dial gauge is shown on the right, measuring the vertical position of the table.</p>	<p>Checking parallelism of the travelling table motion to the table of the machine, in a vertical plane</p>	<p>0,40 for $H = 1000$</p>	<p>Straightedge and dial gauges</p>	<p>Clause 5.422.22</p>

No.	Diagram	Object	Permissible deviation	Measuring instruments	Observations and references in test code ISO/R 230
G8		<p>Checking parallelism of the travelling table motion to the blade plane</p>	<p>0,40 for $I = 1000$</p> <p>In positions d and f, the permissible deviations e shall satisfy the relation</p> $e_f > e_d$	<p>Straightedge, dial gauge and control disc</p>	<p>Clause 5.422.22</p>

No.	Diagram	Object	Permissible deviation	Measuring instruments	Observations and references in test code ISO/R 230
G9		Checking squareness of the crosscut fence of the travelling table to its motion	0,15/500°	Dial gauge and square	<p>Clause 5.522.2</p> <p>Distance <i>J</i></p>

No	Diagram	Object	Permissible deviation	Measuring instruments	Observations and references in test code ISO/R 230
G10		<p>Checking parallelism of the squaring fence movement to the saw blade</p>	<p>0,20 for $K < 800$ 0,25 for $800 < K < 1200$ 0,30 for $K > 1200$</p> <p>At both ends of the squaring fence stroke, the permissible deviations e shall satisfy the relation</p> $e_h > e_g$	<p>Straightedge, dial gauge and control disc</p>	<p>Clause 5.422.22</p>
G11		<p>Checking squareness of squaring fence to the saw blade</p>	<p>0,20/450°</p>	<p>Square, feeler gauges and control disc</p>	<p>Clause 5.512.2</p> <p>* Diameter L</p>

No.	Diagram	Object	Permissible deviation	Measuring instruments	Observations and references in test code ISO/R 230
G12		Measuring run-out of saw spindle	0,03	Dial gauge	<p>Clause 5.612.12</p> <p>The measurement shall be made as close to the flange as possible.</p>
G13		Measuring camming of the saw flange	<p>0,03 for $M < 100$</p> <p>0,04 for $M > 100$</p>	Dial gauge	<p>Clause 5.632</p> <p>Apply an axial pressure F as recommended by the manufacturer.</p>

No.	Diagram	Object	Permissible deviation	Measuring instruments	Observations and references in test code ISO/R 230
G14		Checking squareness of saw blade to the table	0,10/100*	Square, feeler gauges and control disc	<p>Clause 5.512.2</p> <p>The square shall be placed on the fixed table and on the control disc.</p> <p>* Distance <i>N</i></p>
G15		Checking parallelism of the fence to the saw blade	<p>0,15 for $P = 400$</p> <p>At both ends of the fence, the permissible deviations e shall satisfy the relation</p> $e_k > e_j$	Straightedge, dial gauge and control disc	Clause 5.412.2

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BUREAU OF INDIAN STANDARDS

Headquarters :

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002
Telephones : 331 01 31, 331 13 75

Telegrams : Manaksanstha
(Common to all Offices)

Regional Offices :

Telephone

Central : Manak Bhavan, 9 Bahadur Shah Zafar Marg
NEW DELHI 110002

{ 331 01 31
{ 331 13 75

Eastern : 1/14 C. I. T. Scheme VII M, V. I. P. Road, Maniktola
CALCUTTA 700054

37 86 62

Northern : SCO 445-446, Sector 35-C, CHANDIGARH 160036

2 18 43

Southern : C. I. T. Campus, IV Cross Road, MADRAS 600113

41 29 16

Western : Manakalaya, E9 MIDC, Marol, Andheri (East)
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